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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,542	01/26/2004	Itschak Weissman	200208667-1	1619
22879	7590	04/23/2007	EXAMINER	
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			GUARINO, RAHEL	
			ART UNIT	PAPER NUMBER
			2611	
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	04/23/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/765,542	WEISSMAN ET AL.	
	Examiner	Art Unit	
	Rahel Guarino	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 26 January 2004.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-18 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-5,7-11 and 13-17 is/are rejected.
 7) Claim(s) 6, 12 and 13-18 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/19/2006</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. **Claim 1, 7 and 13 are objected to because of the following informalities:**

Claim 1, page 11 line 9, "if a symbol having **the** value I is replaced by a symbol having the value J" should be "if a symbol having **a** value I is replaced by a symbol having the value J".

Claim 7, page 12 line 19, "if a symbol having **the** value I is replaced by a symbol having the value J" should be "if a symbol having **a** value I is replaced by a symbol having the value J".

Claim 13, page 13 line 30, "if a symbol having **the** value I is replaced by a symbol having the value J" should be "if a symbol having **a** value I is replaced by a symbol having the value J".

Appropriate correction is required.

Claim Rejections - 35 USC § 101

2. **35 U.S.C. 101 reads as follows:**

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 13-18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to **statutory** subject matter. Claims 13-18 are directed to "**a computer readable medium encoded with a data processing program**". According to the USPTO Interim Guidelines for Patent Subject Matter Eligibility, computer programs are

neither computer components nor statutory processes, as they are not "acts" being performed nor do they define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized.

Applicant should note, however, that claims directed to a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer's functionality to be realized, and is thus statutory. Claims that recite the following language:

"A computer-readable medium encoded with a computer program..."

"A computer-readable medium having stored thereon instructions for..."
are considered to be product claims and are thus, **statutory PROVIDED** the specification does NOT disclose that the computer-readable medium is a signal, waveform, or carrier wave.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claim 1-18 are rejected under 35 U.S.C. 102(e) as being anticipated by**

Fitton et al. US, 2004/0085917.

Re claim 1, an apparatus comprising (fig. 3)

a memory (406) for storing a degradation function and a received digital signal comprising an input digital signal that has been corrupted by a channel and a partially corrected sequence of symbols (para#12 line 5-8 and para#75 line 15 to next page para#75 line 2) comprising an output of a preliminary denoising system operating on said received digital signal said degradation function providing a measure of the signal degradation that occurs if a symbol having the value I is replaced by a symbol having a value J in said received digital signal (para#76 line 4-8) and

a controller (control module) that generates a processed digital signal from said received digital signal by replacing symbols in said received digital signal, wherein said controller replaces each symbol having a value I in a context of that symbol in said received digital signal with a symbol having a value J if said replacement reduces an estimate (MMSE) of overall signal degradation in said processed digital signal relative to said input digital signal as determined using said degradation function and said partially corrected sequence of symbols (para#77).

Re claim 2, the modified invention as claimed in claim 1, wherein said controller determines the frequency with which instances of one of said symbols in said received signal in one of said contexts is replaced by various symbols in said partially corrected sequence of symbols (para#85 line 1-5).

Re claim 3, the modified invention as claimed in claim 1 further comprising a third memory (fig.3, 324) (para#84 line 1-5) for storing a first list having the identity of

each subsequence of a first length within said received digital signal (para#96 line 6-9) and a table specifying the number of times a symbol at a specific location within that subsequence is replaced by various other symbols in said partially corrected sequence of symbols (table 3 para#101).

Re claim 4, the modified invention as claimed in claim 1, further comprising a denoising system for generating said partially corrected sequence of symbols from said received digital signal (para#106 line 1-5).

Re claim 5, modified invention as claimed in claim 3 wherein said third memory (308) also stores (para#84 line 1-5) a second list having the identity of each subsequence of a second length within said received digital signal and a table (table 2) specifying the number of times a symbol at a specific location within that subsequence is replaced by various other symbols in said partially corrected sequence of symbols (para#96 line 6-12).

Re claim 7, a method for processing a received digital signal comprising an input digital signal that has been corrupted by a channel to generate a processed digital signal (para#32 and para#35 line 1-5), said method comprising:

storing said received digital signal (para#12 line 5-8 and para#75 line 15 to next page para#75 line 2);

receiving a partially corrected sequence of symbols comprising an output of a preliminary denoising system operating on said received digital signal (para#76 line 4-8);

storing information specifying a signal degradation function that measures the

signal degradation that occurs if a symbol having the value I is replaced by a symbol having value J (para#75 line 5-15) and

generating said processed digital signal by replacing each symbol having a value I in a context of that symbol in said received digital signal with a symbol having a value J if replacement reduces an estimate of overall signal degradation in said processed digital signal relative to said input digital signal as determined using said degradation function and said partially corrected sequence of symbols (para#77).

Re claim 8, the modified invention as claimed in Claim 7, wherein said measure of overall signal degradation depends on the frequency with which instances of one of said symbols in said received signal in one of said contexts is replaced by various symbols in said partially corrected sequence of symbols (para#85 line 1-5).

Re claim 9, the modified invention as claimed in Claim 7 comprising storing (fig.3, 324) (para#84 line 1-5) a first list having the identity of each subsequence of a first length within said received digital signal (para#96 line 6-9) and a table specifying the number of times a symbol at a specific location within that subsequence is replaced by various other symbols in said partially corrected sequence of symbols (table 3, para#101).

Re claim 10, the modified invention as claimed in Claim 7, further comprising generating said partially corrected sequence of symbols from said received digital signal (para#106 line 1-5).

Re claim 11, the modified invention as claimed in Claim 9, further comprising storing a second list having the identity of each subsequence of a second length

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(para#84 line 1-5) within said received digital signal and a table (table 2) specifying the number of times a symbol at a specific location within each said subsequence is replaced by various other symbols in said partially corrected sequence of symbols (para#96 line 6-12).

Re claim 13, a computer readable medium encoded (para#34) with a data processing program for processing a received signal comprising an input digital signal that has been corrupted by a channel to generate a processed signal (para#32 and para#35 line 1-5), said data processing program causing a data procession system:

to store said received digital signal (para#12 line 5-8 and para#75 line 15 to next page para#75 line 2);

to receive a partially corrected sequence of symbols comprising an output of a preliminary denoising system operating on said received digital signal (para#76 line 4-8);

to store information specifying a signal degradation function that measures the signal degradation that occurs if a symbol having the value I is replaced by a symbol having value J (para#75 line 5-15) and

to generatr said processed digital signal by replacing each symbol having a value I in a context of that symbol in said received digital signal with a symbol having a value J if replacement reduces an estimate of overall signal degradation in said processed digital signal relative to said input digital signal as determined using said degradation function and said partially corrected sequence of symbols (para# 77).

Re claim 14, modified invention as claimed in Claim 13, wherein said measure

of overall signal degradation depends on the frequency with which instances of one of said symbols in said received signal in one of said contexts is replaced by various symbols in said partially corrected sequence of symbols(para#85 line 1-5).

Re claim 15, the modified invention as claimed in Claim 13, wherein said data processing system is also caused to store (para#84 line 1-5) a first list having the identity of each subsequence of a first length within said received digital signal (para#96 line 6-9) and a table specifying the number of times a symbol at a specific location within that subsequence is replaced by various other symbols in said partially corrected sequence of symbols (table 3, para#101).

Re claim 16, modified invention as claimed in claim 13, wherein said data processing system is also caused to generate said partially corrected sequence of symbols from said received digital signal (para#106 line 1-5).

Re claim 17, modified invention as claimed in claim 15, wherein said data processing system is also caused to store (para#84 line 1-5) a second list having the identity of each subsequence of a second length within said received digital signal and a table (table 2) specifying the number of times a symbol at a specific location within that subsequence is replaced by various other symbols in said partially corrected sequence of symbols symbols (para#96 line 6-12).

Claim Objections

Allowable Subject Matter

5. Claim 6, 12 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rahel Guarino whose telephone number is 571-270-1198. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Payne David can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RG

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